

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Independent Petrochemical Corp - Removal Polrep
Initial and Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VII

Subject: POLREP #1
Final POLREP
Independent Petrochemical Corp
B788
St Louis, MO
Latitude: 38.6278982 Longitude: -90.2459122

To: Kenneth Buchholz, EPA
Adam Ruiz, EPA Region 7

From: Michael Davis, Federal On-Scene Coordinator

Date: 8/22/2016

Reporting Period: 8/14/2014 - 8/26/2016

1. Introduction

1.1 Background

Site Number:	B788	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	CERCLA	Response Type:	PRP Oversight
Response Lead:	PRP	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	00
Mobilization Date:	8/17/2014	Start Date:	8/17/2014
Demob Date:	8/21/2014	Completion Date:	8/26/2016
CERCLIS ID:	MOD06619440	RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category

This was a PRP-Lead Removal without an enforcement instrument.

1.1.2 Site Description

The former Independent Petrochemical Company (IPC) facility operated from prior to 1925 to around 1980 and was used for storing organic solvents, coal oil, and petroleum products. Hazardous substances associated with IPCs operations included acetone, benzene, butyl acetate, butyl alcohol, carbon tetrachloride, cyclohexane, cyclohexanone, dibutyl phthalate, dioctyl phthalate, ethyl acetate, ethylene dichloride, isobutyl alcohol, isophorone, methanol, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, 2-nitropropane, orthodichlorobenzene, PCE, sodium hydroxide, tetrahydrofuran, toluene, 1,1,1-TCA, and xylene. In 1988, on-site structures included more than 30 ASTs, an oil warehouse, and a garage/oil storage building. Historical maps also indicated presence of at least 13 USTs. Currently, two buildings are present on the property, a storage warehouse and a bar/nightclub. The remaining areas of the property are gravel and concrete parking areas. The former above-ground storage tanks (ASTs) and

underground storage tanks (USTs) utilized by ICP for chemical storage have been removed; however, the Missouri Department of Transportation (MDNR) has no records of their removal.

1.1.2.1 Location

The IPC site is at 3930 Chouteau Avenue in urban St. Louis, Missouri. The site is in St. Louis County, near the intersection of South Vandeventer Avenue and Chouteau Avenue. The population of St. Louis is approximately 320,000 (Mable/Geocorr 2010). Geographic coordinates of the approximate center of the site are 38.62787 degrees north latitude and 90.24645 degrees west longitude. The site is within Section 34, Township 2 North, Range 7 East, on the Granite City 7.5-minute topographic quadrangle map.

1.1.2.2 Description of Threat

EPA conducted a Site Inspection (SI) in 1988 and a Preliminary Assessment (PA) in 1989 (E&E 1989a, b). During these investigations, 16 surface soil and 2 pooled water samples were collected. The pooled water samples were collected from drainage areas at the southeast corner of the site.

Numerous volatile organic compounds (VOC) were detected in the surface soil samples. Total xylenes were detected in seven surface soil samples at concentrations ranging from 16 to 23,000 micrograms per kilogram ($\mu\text{g/kg}$). 1,1-Dichloroethane (DCA) (3.0 to 2,300 $\mu\text{g/kg}$), 1,2-dichloroethene (DCE) (14 to 2,000 $\mu\text{g/kg}$), 1,1,1-TCA (35 to 3,400 $\mu\text{g/kg}$), PCE (10 to 350 $\mu\text{g/kg}$), toluene (540 to 5,800 $\mu\text{g/kg}$), and ethyl benzene (160 to 3,900 $\mu\text{g/kg}$) were detected in four samples. Vinyl acetate (170 to 17,000 $\mu\text{g/kg}$) was detected in three samples. 1,1-DCE (430 and 640 $\mu\text{g/kg}$), trichloroethene (TCE) (80 and 1,200 $\mu\text{g/kg}$), and chlorobenzene (460 and 1,900 $\mu\text{g/kg}$) were detected in two samples. 2-Butanone was detected in one sample at a concentration of 2,000 $\mu\text{g/kg}$. None of these concentrations exceeded a Superfund Chemical Data Matrix (SCDM) benchmark or EPA Regional Screening Level (RSL) for industrial soil. The samples containing the highest concentrations of these compounds had been collected from around a loading dock and oily seep-like areas along the south margin of the site.

Numerous semivolatile organic compounds (SVOC) were also detected in the surface soil samples. Bis(2-ethylhexyl)phthalate was detected in seven samples (including a duplicate sample) at concentrations ranging from 230 to 120,000 $\mu\text{g/kg}$, exceeding its SCDM cancer risk (CR) screening concentration of 10,000 $\mu\text{g/kg}$ in three samples. Pentachlorophenol (380 and 32,000 $\mu\text{g/kg}$) was detected in two samples, exceeding its CR of 1,000 $\mu\text{g/kg}$ and RSL for industrial soil of 4,000 $\mu\text{g/kg}$ in one sample. Benzo(a)pyrene (500 $\mu\text{g/kg}$) was detected in one sample, exceeding its CR of 20 $\mu\text{g/kg}$, and indeno(1,2,3-cd)pyrene (790 $\mu\text{g/kg}$) was detected in one sample, exceeding its CR of 200 $\mu\text{g/kg}$. Acenaphthylene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzofuran, 1,4-dichlorobenzene, 1,2-dichlorobenzene, di-n-octyl-phthalate, fluoranthene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene were all detected in at least one sample. However, none of these concentrations exceeded a SCDM benchmark or RSL for industrial soil (if established).

Analytical results from one sample of pooled water adjacent to a former tank farm identified 1,2-DCE at 11,000 micrograms per liter ($\mu\text{g/L}$), along with vinyl chloride (750 $\mu\text{g/L}$), methylene chloride (650 $\mu\text{g/L}$), toluene (2,200 $\mu\text{g/L}$), ethyl benzene (2,900 $\mu\text{g/L}$), and total xylenes (1,100 $\mu\text{g/L}$). The other sample contained 1,2-DCE (2,100 $\mu\text{g/L}$), vinyl chloride (550 $\mu\text{g/L}$), and 1,1,1-TCA (340 $\mu\text{g/L}$). No groundwater, soil vapor, or indoor air samples were collected in 1988.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

In August 2014, at the request of MDNR, EPA returned to the site and conducted an Integrated Site Assessment (ISA). The primary purpose of the ISA was to determine the nature and general extent of contamination in groundwater, soil, sub-slab soil gas, and indoor air that may present a threat to human health and the environment. A geophysical survey was also conducted to locate any remaining USTs. An area where USTs had been removed was located, but no remaining USTs were identified.

Detectable concentrations of 23 SVOCs were identified in the soil samples. Levels of the following eight of these compounds exceeded SCDM benchmark concentrations or RSLs: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, bis(2-ethylhexyl)phthalate, and pentachlorophenol. However, these detections were all at depth and none of these compounds were detected in surface soils where human exposures to contamination would represent a sufficient risk to warrant a removal action for soil.

The laboratory identified 25 VOCs in groundwater samples collected from five Geoprobe wells. Benchmark concentrations were exceeded by concentrations of the following 15 of those VOCs: 1,1-DCA, 1,1-DCE, 1,4-dichlorobenzene, benzene, chlorobenzene, *cis*-1,2-DCE, ethyl benzene, isopropylbenzene, *m*- and/or *p*-xylene, naphthalene, *o*-xylene, PCE, toluene, TCE, and vinyl chloride. However, groundwater is not a

source of drinking water in downtown St Louis, and there is a city ordinance precluding installation of water wells in the area.

Analysis of the sump water sample identified trace concentrations of four VOCs: acetone, chloroethane, naphthalene, and toluene. Total and dissolved arsenic were identified, along with total and dissolved barium and total lead; no benchmark concentrations were exceeded. No TPH or SVOCs were detected in the sample. Due to the low concentrations of detected constituents and the lack of a complete exposure pathway, the sump water did not represent a sufficient risk to warrant a removal action.

Sub-slab soil gas sampling was conducted at six locations beneath the two on-site buildings in August 2014. At two sample locations, one in the warehouse and one in the bar, elevated concentrations of five VOCs were found. In November 2014, additional sampling activities (sub-slab soil gas, indoor air, and ambient air) were conducted at the site. In the November 2014 sub-slab samples, 16 VOCs were detected. VOCs identified at elevated concentrations during the August 2014 sampling event were also detected in the November 2014 sub-slab samples. Two of the VOCs that had been detected at elevated levels in the previous sub-slab samples—1,1-DCA and TCE—were identified in the November 2014 sub-slab soil gas samples at concentrations exceeding RSLs for industrial air (for a cancer risk of 1×10^{-5} , and a Hazard Index of 1 for non-carcinogenic effects) by at least a factor of 10. In the indoor air samples collected in November 2014, 23 VOCs were identified; however, no VOC concentrations exceeded RSLs (for previously identified cancer and non-carcinogenic risk levels) in the indoor air samples. The two indoor samples collected in the bar contained 1,1-DCA, PCE, TCE, and vinyl chloride. The indoor air sample collected in the warehouse contained PCE.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Soil sampling results were reviewed by EPA toxicologists, and it was determined that concentrations of contaminants in soil were within EPA's acceptable risk range for industrial worker, construction worker, and trespasser exposure scenarios. However, the risk for a residential exposure scenario was well outside an acceptable risk range. Thus, EPA recommended that the site not be utilized for purposes other than commercial/industrial (e.g., residential, schools, daycares, etc.) unless soil contamination is remediated to levels which would support residential use.

Although the indoor air samples did not exceed acceptable RSLs, sub-slab vapors exceeded 10 times EPA's RSL benchmarks for industrial air and are therefore considered indicative of possible exposure. Thus, EPA recommended a PRP-lead removal action to mitigate sub-slab vapors for protection of indoor air quality.

2.1.2 Response Actions to Date

The property owner voluntarily agreed to install a sub-slab vapor mitigation system for protection of indoor air. After the installation was complete, the system was allowed to equilibrate and in March 2016 EPA returned to the Site and resampled indoor air. Of the 5 constituents previously detected, only PCE was detected in the follow-up sampling, at concentrations 9 to 10 times lower than pre-mitigation levels and well below applicable health-based screening levels.

Continued operation and maintenance of the sub-slab vapor mitigation is necessary to ensure that indoor air concentrations of the VOCs underlying the property remain below applicable health-based standards.

Thus, EPA requested and the property owner voluntarily agreed to place a restrictive environmental covenant on the property which; (1) stipulates the conditions for continued operation and maintenance of the vapor mitigation system, and (2) ensures the property is never developed for any purposes other than commercial/industrial (e.g., residential, schools, daycares, etc.). The MDNR signed the covenant as a holder, and will ensure compliance with post-removal site controls.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

Independent Petrochemical Company (IPC) is administratively dissolved. Therefore, the only viable PRP identified was the current property owner. The PRP fulfilled the removal action requirements imposed by EPA, which included; (1) installing a sub-slab vapor mitigation system, and (2) recording a restrictive environmental covenant on the property in accordance the Missouri Uniform Environmental Covenants Act (MOECA). No enforcement mechanism was required.

2.1.4 Progress Metrics

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>
N/A					

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

The installation of a sub-slab vapor mitigation system, and recordation of a restrictive environmental covenant on the property, were the only two removal response actions required for this site. Both of these response actions have been completed, and no additional response activities are planned by EPA at this time.

2.2.1.2 Next Steps

This PRP-Lead Removal Action is considered complete, and no additional response activities by EPA are planned. MDNR may enter the site into their Long Term Stewardship (LTS) program to ensure maintenance of PRSCs in accordance with the MOECA covenant.

2.2.2 Issues

None anticipated.

2.3 Logistics Section

The scope of this response did not warrant a structured incident management team (IMT), and there was no Logistics Section Chief or separate logistics section.

2.4 Finance Section

2.4.1 Narrative

The scope of this response did not warrant a structured IMT, and there was no Finance Section Chief or separate finance section.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
START	\$55,432.00	\$54,059.00	\$1,373.00	2.48%
Intramural Costs				
Total Site Costs	\$55,432.00	\$54,059.00	\$1,373.00	2.48%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost

accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

2.5 Other Command Staff

2.5.1 Safety Officer

The removal action was implemented voluntarily by the PRP. The limited scope of the response did not warrant a full IMT or a safety officer organizationally. The safety officer on site for START was the project manager. The OSC is generally responsible for overall site safety. A consolidated Health and Safety Plan (HASP) was prepared for all sampling activities which covered the primary entities on site (START and the EPA). The combined HASP was reviewed by the OSC and by EPA's removal Health and Safety Coordinator at the time, Adam Ruiz. No safety issues were observed by the OSC, and no significant safety incidents occurred.

2.5.2 Liaison Officer

The scope of this response did not warrant a structured IMT, and there was no Liaison Officer assigned

2.5.3 Information Officer

The scope of this response did not warrant a structured IMT, and there was no Information Officer assigned.

3. Participating Entities

3.1 Unified Command

The limited scope of this removal action did not warrant a Unified Command

3.2 Cooperating Agencies

MDNR

4. Personnel On Site

- Mike Davis, USEPA
- John Frey, USEPA
- Lorenzo Sena, USEPA
- Adam Ruiz, USEPA
- Cosmo Canacari, START
- Laura Moore, START
- Rick Claytor, START

5. Definition of Terms

N/A

6. Additional sources of information

6.1 Internet location of additional information/report

<https://www.epaossc.org/IndependentPetrochemicalCorp>

6.2 Reporting Schedule

This is a final POLREP. No additional reporting anticipated.

7. Situational Reference Materials

N/A

